

5 Ways To Optimize a Clinician's Digital Experience

A look at survey results for the
biggest challenges in supporting
virtual applications and desktops



Clinicians and Patients Are Everywhere

Over the next **5 years**, consumers expect to make greater use of virtual healthcare opportunities
([Bain](#))

Consumer adoption of telehealth services jumped from 11% in 2019 to **49%** in 2020 ([McKinsey](#))

82% of consumers view digital options as the best way to monitor health (McKinsey)

74% of millennials prefer telehealth visits to in-person doctor exams
([GlobalMed](#))

52.5% of clinicians report more effective treatment with virtual healthcare visits vs. in-office treatment ([ResearchGate](#))

85% of patients who receive telemedicine services are satisfied with their medical care (MDPI)

Virtualization of EHR Software is Almost Mandatory



HIPAA and HITECH compliance



Consistent clinician experience



Empower care teams



Extend reach of care



Simplified access



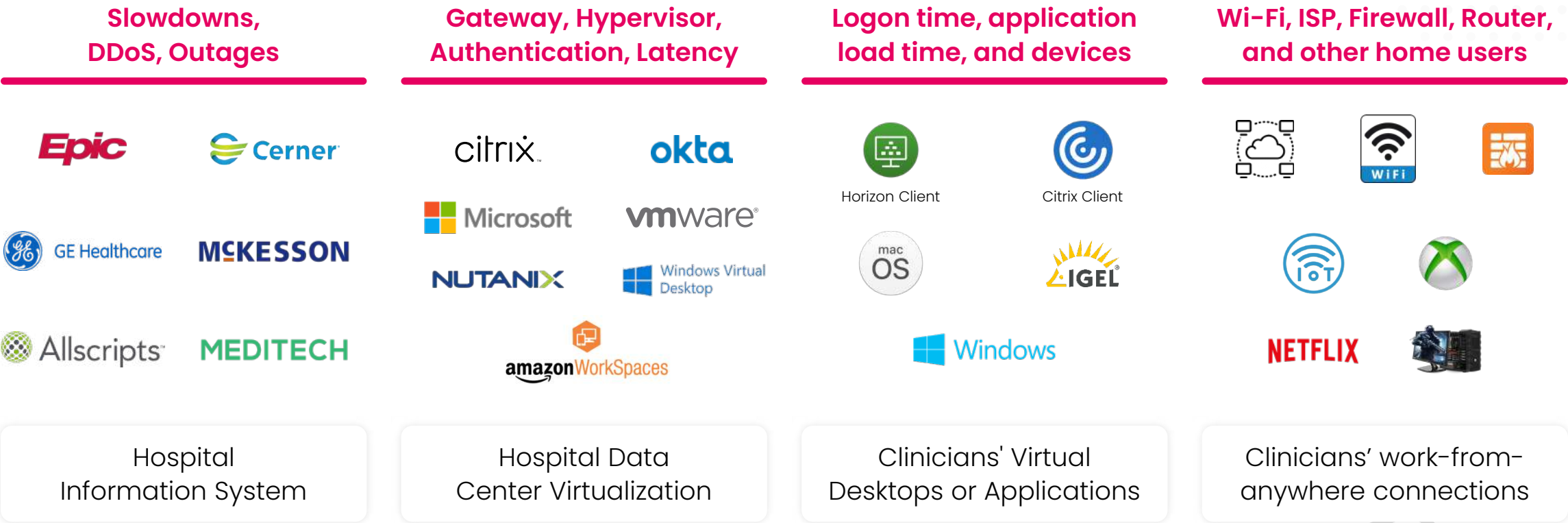
Prevent PHI theft



Streamline management



But Virtualization Cannot Solve Every Problem



5 Ways To Optimize a Clinician's Digital Experience

At ControlUp, we have analyzed billions of hours of operational metadata, and have discovered the top 5 areas that produce the greatest benefit for supporting work-from-anywhere clinicians.

- 1 Ensure patient care resources are available
- 2 Increase performance for VDI / EUC sessions
- 3 Reduce logon time
- 4 Optimize unified communication
- 5 Analyze and optimize work and home networks

Ensure Patient Care Resources Are Available



Today, patient care applications have many dependencies from both internal and external resources.

As we depend on more resources to provide patient care, we must proactively monitor all internal and external resources.

Hospital Information System



Hospital DC Virtualization



Key resources suspects

HIS	DC
<ul style="list-style-type: none">• ISP• DNS• DDNS attack• High latency• Overused resources	<ul style="list-style-type: none">• Hardware• Networking• Latency• Overused resources• Right sizing

Ensure Patient Care Resources Are Available

Proactive understanding of all patient care resources alerts IT to problems before clinicians start calling the help desk.

Knowing the health of virtual applications and desktops, SaaS applications, web apps and services, and network resources is key to delivering outstanding patient care. ControlUp's synthetic transaction monitoring determines whether or not resources are available.

With historical reporting on the availability of patient care resources and apps, ControlUp provides a detailed analysis, breakdown of test results.

ControlUp then alerts IT with email and webhooks to third-party systems.



Increase Performance for VDI/EUC Sessions



Performance of a clinician's virtual desktop or applications can be subjective. To gain an objective view of the clinician's digital experience, you must be able to observe key metrics in real time, analyze data against averages, and remove bottlenecks to increase performance.

Clinician's Virtual Desktop or Applications



VDI/EUC performance suspects

Gateway	Hypervisors	Operating System
<ul style="list-style-type: none">• Broker overload• Broker misconfigured• Load balancer misconfigured• Authentication	<ul style="list-style-type: none">• Data store performance• Network latency• Over-committed CPUs• Mixed hardware	<ul style="list-style-type: none">• Under-resourced virtual machines• High-latency sessions• Improper OS optimization• Runaway processes• VDI client version and protocol selection

Increase Performance for VDI/EUC Sessions



ControlUp observes the clinician's digital experience in real time from hypervisors, such as Citrix and VMware Horizon. ControlUp collects over one thousand metrics from the hypervisor, desktop, and application layers to determine a digital experience score.

ControlUp then compares the clinician's digital experience with those of other clinicians and customers for an objective understanding of the digital experience. For a deeper analysis, ControlUp's (AI / ML-based) Virtual Expert™ is used to guide IT through troubleshooting and root-cause analysis.

Once you have determined an area to optimize, the Virtual Expert is there again to suggest a remediation. And with an extensive community-based script action library, you can easily optimize a single clinician's digital experience or thousands with just one click.

Reduce Logon Times



Often, clinicians assume lengthy logon times are normal and think they are a product of IT imposing outdated, lackluster technology on them. Reducing logon times is one of the best ways to reduce frustration, increase productivity, and show clinicians the value of IT services.

Clinicians work from anywhere



Horizon Client



Citrix Client



Logon performance suspects

Pre-Startup Phase	Logon Phase	Shell Start
<ul style="list-style-type: none">• Authentication• EUC-VDI broker• Protocol connection• Workspace app• Horizon client	<ul style="list-style-type: none">• User profiles• Group policy• Logon scripts• Print & driver mapping• Client-side extensions• App Volumes• FSLogix	<ul style="list-style-type: none">• Startup applications• AppX & Active Setup• Citrix WEM• VMware DEM• Scheduled tasks• Startup scripts

Reduce Logon Times

ControlUp collects real-time metrics and displays detailed information about the entire logon process.

Once a slow logon is detected, ControlUp's Virtual Expert provides contextual help to search for root cause, using our Analyze Logon Duration script. With just one click, every major event related to the user's logon process can be seen and the output will pinpoint the technology responsible for any logon delay.

Using ControlUp Insights' historical reporting, you can see how your logons improve over time or are affected by changes made to an Instant Clone gold image or GPOs. You can also compare your environment with those of other customers using ControlUp's anonymous community benchmark reporting.



Unified Communications



Accessing Unified Communications applications—such as Zoom or Microsoft Teams—in a VDI or RDS session can be problematic.

UC Vendor



Clinicians' Virtual Desktop or Applications



Horizon Client



Citrix Client



VDI / EUC performance suspects

UC Vendor	VDI / EUC
<ul style="list-style-type: none">• Outage• Overused resources• Latency• DDoS	<ul style="list-style-type: none">• Not optimized for UC• Host-side rendering• Media hairpinning• Latency• Bandwidth consumption• No QoS

Optimize Unified Communications

ControlUp's synthetic testing ensures UC applications are running as expected and will send proactive alerts when the services are unavailable or experiencing problems.

ControlUp uses configuration checking to analyze the VDI/UC environment to see if it is optimized.

Citrix HDX optimization users can improve the user experience for Teams video / audio use.

VMware multimedia redirection optimization users can improve the user experience for web browsing and Unified Communications video / audio use.

These optimizations will also significantly reduce the resource consumption on the VDA.



Optimize Home Networks



Supporting clinicians working from home poses challenges as unique as each user. Some users have robust internet service, but experience issues because other people at home share the same connection. Conversely, some homes have poor internet connections, but a sophisticated high-speed Wi-Fi mesh.

Clinicians work from home



NETFLIX



Home network suspects

ISP	Wi-Fi	Firewall
<ul style="list-style-type: none">• Bandwidth• Throughput• Latency	<ul style="list-style-type: none">• Signal strength• Bandwidth• Throughput• Latency	<ul style="list-style-type: none">• Bandwidth• Throughput• Latency

Optimize Work from Home



ControlUp can capture detailed information—including NIC speed, Wi-Fi Signal strength, and LAN latency to calculate total session latency—about the clinician's digital experience .

From here, you can determine whether a home user needs to move closer to their Wi-Fi router, upgrade their ISP bandwidth, or if the problem lies somewhere else.

ControlUp's Virtual Expert is there to guide you through troubleshooting and remediation. And with an extensive community-driven script library, you can easily optimize the digital experience for a single clinician—or thousands—with a single click.

Conclusion

ControlUp has solved the Top 5 most-reported problems in optimizing a clinician's digital experience, plus some of the most troublesome work-from-anywhere issues—and we can help you, too.

- Slow logons in EUC environments
- Application performance issues
- Work-from-home issues
- Unified communications issues
- Slow virtual sessions

Let us show you how we can help you get control of application and desktop issues so your clinicians can be effective and at their most productive.

In just 15 minutes, can show you 5 ways ControlUp can optimize a clinician's digital experience. Or? Simply try ControlUp yourself; there are no salespeople needed, and it takes just 10 minutes.





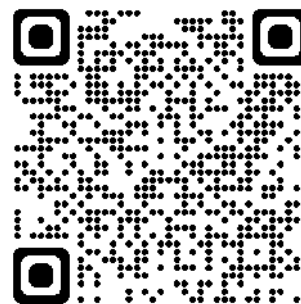
Offices in US, Europe, and Israel

"ControlUp allows us to bypass egos and external influences and just see the raw information. There's no ego in ControlUp; it's just information, unvarnished by humans."

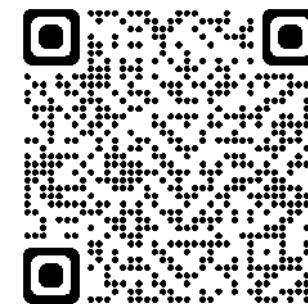


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